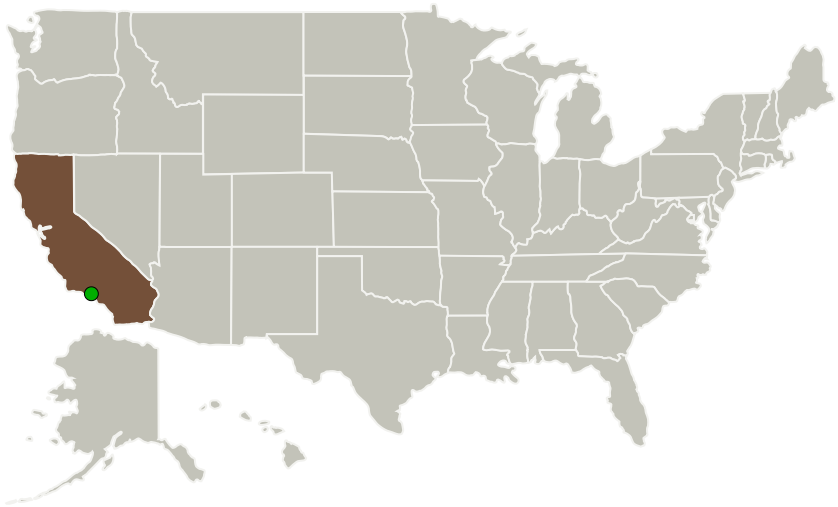
High-Performance, Pump-Fed Propulsion for Mars Ascent Vehicle Applications, Phase I

Completed Technology Project (2015 - 2015)

Project Introduction

To-date, the realization of high-performance liquid bipropellant rocket engines for ascent vehicle and sample return applications has largely been hindered by the inability to obtain "on-board" pressurization through a light-weight and low-complexity pump. Ventions seeks to fulfill this critical need by optimizing a MON-30 electric pump previously built under an earlier NASA SBIR to offer further efficiency improvements, and to provide a competitive liquid bipropellant propulsion system as an alternative to the existing solid / hybrid propellant designs for a Mars Ascent Vehicle.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Ventions, LLC	Lead Organization	Industry	San Francisco, California
Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California

Primary U.S. Work Locations
California

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Project Transitions

June 2015: Project Start

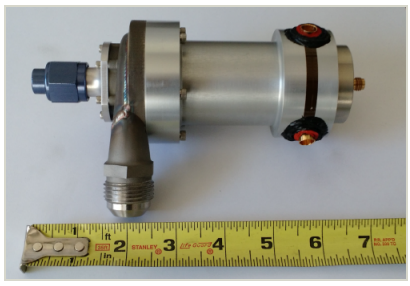
December 2015: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139081)*

Images

Briefing Chart
High-Performance, Pump-Fed Propulsion for Mars Ascent Vehicle Applications Briefing Chart *(https://techport.nasa.gov/image/134129)*



Final Summary Chart Image
High-Performance, Pump-Fed Propulsion for Mars Ascent Vehicle Applications, Phase I Project Image *(https://techport.nasa.gov/image/130636)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Ventions, LLC

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

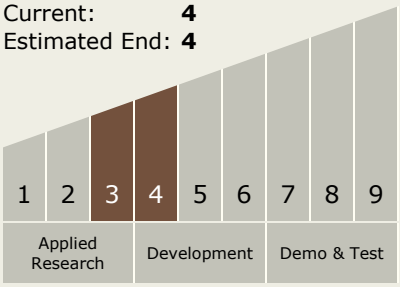
Carlos Torrez

Principal Investigator:

Adam London

Technology Maturity (TRL)

Start: **3**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.1 Chemical Space Propulsion
    - TX01.1.2 Earth Storable

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System